

# **EXHIBIT 1**

## **FILED UNDER SEAL**

1 QUINN EMANUEL URQUHART & SULLIVAN, LLP  
Charles K. Verhoeven (Bar No. 170151)  
2 charlesverhoeven@quinnemanuel.com  
Melissa Baily (Bar No. 237649)  
3 melissabaily@quinnemanuel.com  
Lindsay Cooper (Bar No. 287125)  
4 lindsaycooper@quinnemanuel.com  
50 California Street, 22nd Floor  
5 San Francisco, California 94111-4788  
Telephone: (415) 875-6600  
6 Facsimile: (415) 875-6700

7 Attorneys for GOOGLE LLC

8 **UNITED STATES DISTRICT COURT**  
9 **NORTHERN DISTRICT OF CALIFORNIA**  
10 **SAN FRANCISCO DIVISION**

11 GOOGLE LLC,

12 Plaintiff

13 v.

14 SONOS, INC.,

15 Defendant.  
16

CASE NO. 3:20-cv-06754-WHA

**GOOGLE LLC'S INVALIDITY  
CONTENTIONS**

	<u>TABLE OF CONTENTS</u>	<u>Page</u>
1		
2		
3	I. INTRODUCTION.....	1
4	II. PRIORITY DATE OF THE ASSERTED PATENTS AND CLAIMS .....	1
5	III. INVALIDITY UNDER 35 U.S.C. § 101 .....	2
6	A. '206, '966 and '885 Patents.....	3
7	B. '033 and '615 Patents.....	6
8	IV. '966 PATENT.....	8
9	A. Patent Local Rule 3-3(A) – Identification of Prior Art .....	8
10	1. Prior Art Patents And Publications .....	8
11	2. Prior Art Publications .....	10
12	3. Prior Art Systems and Products .....	13
13	B. Patent Local Rule 3-3(B), (C) – Anticipation And Obviousness.....	17
14	1. Obviousness.....	17
15	C. Invalidity Under 35 U.S.C. § 112.....	18
16	1. Lack of Enablement And Written Description Under 35 U.S.C.	
17	§ 112 ¶ 1 .....	19
18	2. Indefiniteness Under 35 U.S.C. § 112 ¶ 2 .....	20
19	3. Functional Claiming .....	21
20	V. '885 PATENT.....	22
21	A. Patent Local Rule 3-3(A) – Identification of Prior Art .....	22
22	1. Prior Art Patents And Publications .....	22
23	2. Prior Art Publications .....	22
24	3. Prior Art Systems and Products .....	22
25	B. Patent Local Rule 3-3(B), (C) – Anticipation And Obviousness.....	24
26	1. Charts Identifying Disclosure in Prior Art Invalidating Asserted	
27	Claims.....	24
28	2. Obviousness Prior Art.....	24
	C. Invalidity Under 35 U.S.C. § 112.....	25

1	1.	Lack of Enablement And Written Description Under 35 U.S.C. § 112 ¶ 1 .....	26
2	2.	Indefiniteness Under 35 U.S.C. § 112 ¶ 2 .....	27
3	3.	Functional Claiming .....	27
4	VI.	'206 PATENT.....	28
5	A.	Patent Local Rule 3-3(A) – Identification of Prior Art .....	28
6	1.	Prior Art Patents And Publications .....	28
7	2.	Prior Art Publications .....	29
8	3.	Prior Art Systems and Products .....	29
9	B.	Patent Local Rule 3-3(B), (C) – Anticipation And Obviousness.....	30
10	1.	Charts Identifying Disclosure in Prior Art Invalidating Asserted Claims.....	30
11	2.	Obviousness Prior Art.....	30
12	C.	Invalidity Under 35 U.S.C. § 112.....	31
13	1.	Lack of Enablement And Written Description Under 35 U.S.C. § 112 ¶ 1 .....	32
14	2.	Indefiniteness Under 35 U.S.C. § 112 ¶ 2 .....	33
15	3.	Functional Claiming .....	35
16	VII.	'033 PATENT.....	35
17	A.	Patent Local Rule 3-3(A) – Identification of Prior Art .....	35
18	1.	Prior Art Patents And Publications .....	35
19	2.	Prior Art Publications .....	42
20	3.	Prior Art Systems and Products .....	45
21	4.	Invalidity Under 35 U.S.C. § 102(f) and Improper Inventorship .....	48
22	5.	Invalidity Under 35 U.S.C. § 102(g).....	50
23	B.	Patent Local Rule 3-3(B), (C) – Anticipation And Obviousness.....	55
24	1.	Charts Identifying Disclosure in Prior Art Invalidating Asserted Claims.....	55
25	2.	Obviousness Prior Art.....	56
26	C.	Invalidity Under 35 U.S.C. § 112.....	56
27			
28			

1	1.	Lack of Enablement And Written Description Under 35 U.S.C. § 112 ¶ 1 .....	57
2			
3	2.	Indefiniteness Under 35 U.S.C. § 112 ¶ 2 .....	59
4	VIII.	'615 PATENT.....	61
5	A.	Patent Local Rule 3-3(A) – Identification of Prior Art .....	61
6	1.	Prior Art Patents And Publications .....	61
7	2.	Prior Art Publications .....	61
8	3.	Prior Art Systems and Products .....	61
9	4.	Invalidity Under 35 U.S.C. § 102(f) and Improper Inventorship .....	62
10	5.	Invalidity Under 35 U.S.C. § 102(g).....	63
11	B.	Patent Local Rule 3-3(B), (C) – Anticipation And Obviousness.....	64
12	1.	Charts Identifying Disclosure in Prior Art Invalidating Asserted Claims.....	64
13	2.	Obviousness Prior Art.....	64
14	C.	Invalidity Under 35 U.S.C. § 112.....	65
15	1.	Lack of Enablement And Written Description Under 35 U.S.C. § 112 ¶ 1 .....	66
16	2.	Indefiniteness Under 35 U.S.C. § 112 ¶ 2 .....	67
17	IX.	OBVIOUSNESS .....	68
18	A.	'966 Patent '206 Patent and '885 Patent.....	70
19	1.	General state of the art. ....	70
20	2.	Obviousness combinations.....	71
21	a.	Speaker grouping.....	72
22	b.	Storing group information at a speaker .....	73
23	c.	Remote control of speaker group.....	73
24	d.	Dynamic modification of speaker groups.....	74
25	e.	Creating or using “scene” information.....	75
26	f.	Graphical user interface .....	75
27	g.	Naming a group.....	75
28			

1	h.	Overlapping or non-overlapping groups .....	76
2	i.	Digital Data Networks .....	76
3	j.	Sonos-Related Prior Art.....	77
4	B.	‘033 Patent and ‘615 Patents.....	77
5	1.	General state of the art. ....	77
6	2.	Obviousness combinations.....	78
7	a.	Playback to multiple devices (stereo pair, synchrony, group).....	79
8	b.	Playback transfer (selectable option, display representation) .....	79
9	c.	Playback from the Cloud.....	81
10	d.	Google-Related Prior Art.....	82
11	X.	DOUBLE PATENTING.....	83
12	XI.	PATENT LOCAL RULE 3-4 DOCUMENT PRODUCTION.....	85
13	XII.	OTHER RESERVATIONS AND EXPLANATIONS.....	85

14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

1 **I. INTRODUCTION**

2 Pursuant to Patent Local Rule 3-3 and 3-4, and the Court's Scheduling Order, Defendant  
3 Google LLC provides these Invalidity Contentions to Plaintiff Sonos, Inc. ("Sonos") for the  
4 following patents (collectively, "Asserted Patents") and claims (collectively, "Asserted Claims")  
5 identified as asserted in Sonos's email of October 28, 2021 to Google:<sup>1</sup>

- 6 • '966 Patent (claims 1, 2, 4, 6, 8, 9, 10, 12, 14, 16) ('966 Asserted Claims)
- 7 • '885 Patent (claims 1, 3, 7, 8, 10, 14) ('885 Asserted Claims)
- 8 • '615 Patent (claims 13, 14, 15, 18, 19, 20, 21, 25, 26) ('615 Asserted Claims)
- 9 • '033 Patent (claims 1, 2, 4, 9, 11, 12, 13, 16) ('033 Asserted Claims)

10 Google addresses the invalidity of the Asserted Claims and concludes with a description of  
11 their document productions and identification of additional reservations and explanations.

12 **II. PRIORITY DATE OF THE ASSERTED PATENTS AND CLAIMS**

13 Sonos asserted the following priority dates in its October 21, 2021 Disclosure of Asserted  
14 Claims and Infringement Contentions ("Infringement Contentions"):

- 15 • '206 Asserted Claims: September 12, 2006
- 16 • '966 Asserted Claims: September 12, 2006
- 17 • '885 Asserted Claims: September 12, 2006
- 18 • '615 Asserted Claims: December 30, 2011
- 19 • '033 Asserted Claims: December 30, 2011

20 It is Sonos' burden to show entitlement to its asserted priority dates, and Sonos has failed  
21 to meet that burden. Additionally, as described below, elements of the Asserted Claims lack  
22 written description and enablement support, and those Asserted Claims therefore cannot claim  
23 priority to earlier continuation applications on the face of the Asserted Patents.

24  
25  
26  
27 <sup>1</sup> Sonos failed to serve infringement contentions for U.S. Patent No. 9,344,206 ("'206 Patent")  
28 after the Western District of Texas held each asserted claim of the '206 patent invalid due to  
indefiniteness. Google addresses the invalidity of the '206 Patent (claims 1-5, 7 10-19) ('206  
Asserted Claims) that are at issue in its declaratory judgment action.

1 **III. INVALIDITY UNDER 35 U.S.C. § 101**

2 To be patentable subject matter under § 101, a claim must be directed to one of four  
3 eligible subject matter categories: “new and useful process, machine, manufacture, or  
4 composition of matter.” 35 U.S.C. § 101. “Claims that fall within one of the four subject matter  
5 categories may nevertheless be ineligible if they encompass laws of nature, physical phenomena,  
6 or abstract ideas.” *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980). The Supreme Court  
7 established a two-step test for deciding the subject matter eligibility of claims under § 101. *Alice*  
8 *Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014). First, the claims must be  
9 analyzed to determine whether they are drawn to one of the statutory exceptions. *Id.* Claims that  
10 invoke generic computer components instead of reciting specific improvements in computer  
11 capabilities are abstract under this first step. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327,  
12 1335-36 (Fed. Cir. 2016). Second, the elements of the claims must be viewed both individually  
13 and as an ordered combination to see if there is an “inventive concept.” *Id.* The mere fact that a  
14 claim recites or implies that an abstract idea is implemented using a general-purpose computer  
15 does not supply an inventive concept necessary to satisfy § 101. *See Elec. Power Grp., LLC v.*  
16 *Alstom S.A.*, 830 F.3d 1350, 1355 (Fed. Cir. 2016); *Alice*, 134 S. Ct. at 2357-59.

17 All of the Asserted Claims are directed to ineligible subject matter under 35 U.S.C. § 101  
18 and applicable case law authority.<sup>2</sup> The descriptions of the alleged inventions below accept (for  
19

20 \_\_\_\_\_  
21 <sup>2</sup> *See, e.g., Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014); *Mayo Collaborative*  
22 *Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012); *Trading Techs. Int’l, Inc. v. IBG, LLC*,  
23 921 F.3d 1084 (Fed. Cir. 2019); *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759 (Fed. Cir.  
24 2019); *SAP America, Inc. v. InvestPic, LLC*, 898 F.3d 1161 (Fed. Cir. 2018); *Interval Licensing*  
25 *LLC v. AOL, Inc.*, 896 F.3d 1335 (Fed. Cir. 2018); *Aatrix Software, Inc. v. Green Shades Software,*  
26 *Inc.*, 882 F.3d 1121 (Fed. Cir. 2018); *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*,  
27 874 F.3d 1329 (Fed. Cir. 2017), *cert. denied*, 139 S. Ct. 378 (2018); *Intellectual Ventures I LLC v.*  
28 *Capital One Fin. Corp.*, 850 F.3d 1332 (Fed. Cir. 2017); *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d  
1229 (Fed. Cir. 2016); *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253 (Fed. Cir.  
2016); *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016); *Enfish, LLC v.*  
*Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016); *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d  
1369 (Fed. Cir. 2016); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363  
(Fed. Cir. 2015); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343 (Fed. Cir. 2015);  
*OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir. 2015); *Content Extraction &*  
*Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343 (Fed. Cir. 2014); *DDR*  
*Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014); *buySAFE, Inc. v. Google, Inc.*,  
765 F.3d 1350 (Fed. Cir. 2014); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d

1 this purpose only) that Sonos’ preliminary infringement contentions accurately identify the scope  
2 of the claims. The descriptions of the alleged inventions below are not intended as and are not an  
3 admission regarding the proper scope of the claims.

4 **A. ’206, ’966 and ’885 Patents**

5 Based on Sonos’s infringement contentions, the Asserted Claims of the ’206, ’966 and  
6 ’885 Patents are each directed to an abstract idea of conventional speaker grouping, receiving and  
7 displaying info and/or alarm clock functionality. Each asserted claim fails to satisfy the  
8 requirements of 35 U.S.C. § 101.

9 Under Sonos’s interpretation, independent claim 1 of the ’966 patent requires, in essence,  
10 grouping speakers together when paired with a computer or portable computing device. The  
11 stated purpose of the ’966 patent is to “control[] a plurality of multimedia players, or simply  
12 players, in groups.” ’966 Patent at 2:36-38. The patents assert that there was “a need for dynamic  
13 control of the audio players as a group” and that “[w]ith a minimum manipulation, the audio  
14 players may be readily grouped” according to the alleged invention. *Id.* at 2:19-21. The patent  
15 recognized that although speaker grouping was well known in the art, prior to computerizing this  
16 process, the systems were “generally either hard-wired or controlled by a pre-configured and pre-  
17 programmed controller.” *Id.* at 1:64-65. Based on these statements and Sonos’s infringement  
18 contentions, the alleged invention, therefore, is nothing more than computerizing the age-old  
19 process of manually plugging speakers in to reproduce the same or different audio sources. The  
20 focus of the ’966 patent is not any specific improvement to computer technology for grouping  
21 speakers, but rather the use of computers to conserve human resources by automating work  
22 otherwise performed through human labor. The Federal Circuit has held that the mere automation  
23 of manual processes using generic computer components is directed to an abstract idea. *Enco*  
24 *Systems, Inc. v. DaVincia, LLC*, 845 Fed. App’x 953, 957 (holding claims directed at automating  
25 the AV-captioning process were an abstract idea). Nor is Sonos’s claimed addition of wireless  
26 technology to conventional speaker grouping sufficient to show that the invention is not abstract.

27 \_\_\_\_\_  
28 1344 (Fed. Cir. 2014); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir.  
2011).

1 “[T]he broad concept of communicating information wirelessly, without more, is an abstract idea.”  
2 *Chamberlain Grp. v. Techtronic Indus. Co.*, 935 F.3d 1341, 1347 (Fed. Cir. 2019); *Sensormatic*  
3 *Elecs., LLC v. Wyze Labs, Inc.*, No. 2020-2320, 2021 WL 2944838, at \*3 (Fed. Cir. July 14,  
4 2021). The fact that Sonos now accuses mental processes of meeting the alleged “zone scene”  
5 only highlights the abstractness of the claims. A “mental process [is] a subcategory of  
6 unpatentable abstract ideas.” *CyberSource Corporation v. Retail Decisions, Inc.*, 654 F.3d 1366,  
7 1371 (Fed. Cir. 2011); *Synopsys, Inc. v. Mentor Graphics Corp.*, 78 F. Supp. 3d 958, 965 (N.D.  
8 Cal. 2015), *aff’d*, 839 F.3d 1138 (Fed. Cir. 2016) (“The asserted claims, like those in *Alice* and  
9 *Mayo*, add nothing other than a way to implement that mental process on a computer.”). Sonos’s  
10 attempt to claim all computerized speaker grouping implementations also underscores its attempt  
11 at preemption through the claimed unpatentable subject matter, which is the policy rationale for  
12 Section 101. *Alice*, 573 U.S. at 223. Courts have concluded that a claim is not patent-eligible  
13 when the claim is so abstract that it preempts “use of [the claimed] approach in all fields” and  
14 “would effectively grant a monopoly over an abstract idea.” *Bilski*, 561 U.S. at 612. This is the  
15 case here because Sonos’s claimed point of novelty is that a user would have an idea of what the  
16 “zone scene” is when he or she creates the zone—which would likely always be the case—shows  
17 that the entire field of speaker grouping would be preempted if Sonos were permitted to continue  
18 with these claims.

19 Under Sonos’s interpretation, independent claim 1 of the ’966 patent can similarly be  
20 recognized as a computer-controlled alarm clock. For example, the patent describes the invention  
21 as follows: “According to one embodiment, each zone player in a scene may be set up for  
22 different alarms. For example, a ‘Morning’ scene includes three zone players, each in a bedroom,  
23 a den, and a dining room. After selecting the scene, the user may set up an alarm for the scene as  
24 whole. As a result, each of the zone players will be activated at a specific time.” ’966 Patent at  
25 9:64-10:2. The patent therefore concedes that the “scene” information, to the extent that Sonos  
26 applies any meaning to the term, is simply conventional alarm clock functionality. That alarm  
27 clock may play audio upon request from the computerized controller and may play that alarm in  
28 different “zones,” but its core functionality is unchanged from a conventional alarm clock.

1 Under Sonos's infringement contentions, the dependent claims do not add anything that  
2 changes the character of the claims from being directed to the same abstract idea as all the other  
3 claims. For example, the dependent claims require "displaying" the zones, using a user interface  
4 to interact with the zones, setting a volume level, and saving zone-related information. These are  
5 all conventional aspects of a computerized device or a speaker, and they do not add any non *de*  
6 *minimis* contributions to the invention.

7 Similarly, the '885 and '206 Patents also suffer from the same flaws under Sonos's  
8 infringement contentions. Although the '885 and '206 Patents require the user to create and use  
9 different speaker groups, the core functionality is no different from conventional speaker  
10 grouping, receiving and displaying information, or alarm clocks as described above.

11 Moreover, the Asserted Claims of the '206, '966 and '885 patents lack any inventive step  
12 to elevate the idea to patentability. As the references cited in these Invalidity Contentions  
13 demonstrate, the alleged inventions merely apply conventional and well-understood techniques.  
14 The claims merely require the claimed judicial exceptions to be applied and only include  
15 instructions to implement the processes on a computer. The independent and dependent claims at  
16 most add insignificant extra-solution activity to the judicial exceptions or generally link the  
17 judicial exception to the computer and multimedia fields, which is insufficient to transform the  
18 claims into patentable subject matter. Although the '206, '966 and the '885 Patents discuss adding  
19 standalone speakers to existing speaker groups and modifying the alleged groupings, this is a  
20 natural consequence of adding computerized technology to conventional speaker groupings.  
21 Computers inherently can allow for modification and saving information digitally means that any  
22 data on a computer may be modified dynamically. Sonos did not contribute any inventive concept  
23 beyond allegedly adding well known computerized functionality to conventional speaker systems.  
24 Instead, the claims "fail to set forth any particular physical configuration" that could satisfy Step  
25 2, and even if Sonos could identify such a physical configuration, "[p]roviding generic devices  
26 that communicate with each other [] is a conventional application of an abstract idea," again  
27 failing to satisfy Step 2. *Sensormatic Elecs., LLC v. Wyze Labs, Inc.*, No. 2020-2320, 2021 WL  
28 2944838, at \*3 (Fed. Cir. July 14, 2021); *Cisco Sys., Inc. v. Uniloc 2017 LLC*, 813 F. App'x 495,

1 499 (Fed. Cir. 2020) (holding that a patent covering using conventional computer hardware and  
2 wireless systems to form a network failed to satisfy Step 2).

3 **B. '033 and '615 Patents**

4 The independent claims of the '615 and '033 Patents are each directed to an abstract idea  
5 of playing music from a remote music source and/or transferring playback from one device to  
6 another. Similar ideas related to accessing media remotely have been considered and found  
7 patent-ineligible as abstract. *See, e.g., Kaavo, Inc. v. Cognizant Technology Solutions Corp., Inc.*,  
8 14-1192-LPS-CJB (“setting up and managing a cloud computing environment” as abstract idea),  
9 *Intellectual Ventures I, LLC v. Motorola Mobility LLC*, 81 F. Supp. 3d 356, 366 (D. Del. 2015)  
10 (“distributing software updates to a computer” as abstract idea), *Cloud Satchel, LLC v.*  
11 *Amazon.com, Inc., et al* (2014, D. Del.) (cataloguing documents to facilitate their retrieval from  
12 storage in the field of remote computing as the abstract idea). And the Federal Circuit has also  
13 found similar claims were abstract. *See, e.g., Affinity Labs of Texas, LLC v. DirectTV, LLC*, 838  
14 F.3d 1253 (Fed. Cir. 2016); *see also Affinity Labs of Texas, LLC v. Amazon.Com, Inc.*, 2015 WL  
15 3757497, \*7 (W.D. Tex. 2015) (abstract idea of “delivering selectable media content and  
16 subsequently playing the selected content on a portable device”). To be sure, humans have been  
17 transferring playback of remote media from one device to another for decades. To invoke a  
18 simple example, one can analogize the method claimed in these patents to playing a song on the  
19 radio in your home, identifying other radios in the home that can playback the radio station,  
20 selecting one of those radio for playback, and tuning the radio to receive and playback the song on  
21 the radio station. The claimed abstract idea thus has long been carried out in a real-world  
22 environment. And the fact that the claimed media is retrieved from the cloud, does not render the  
23 claim any less abstract, as other district courts have found (*see Kavvo* and *Affinity Lab* cases  
24 above). In fact, humans have been manually creating queues of cloud-based media for years,  
25 including queues that are comprised of “resource locators” which point to media. *See, e.g.*, U.S.  
26 Publication No. 2009/0228919 to Zott (“Zott”) at Figs. 1-18. Thus, the concept of playing back  
27 remote media or transferring playback from one device to another is nothing more than the  
28 automation of a process that can be performed by humans. *Credit Acceptance Corp. v. Westlake*

**V. '885 PATENT**

**A. Patent Local Rule 3-3(A) – Identification of Prior Art <sup>6</sup>**

**1. Prior Art Patents And Publications**

The following patents and publications are prior art to the '885 Asserted Claims under at least 35 U.S.C. §§ 102(a), (b), (e), (f) and/or describes systems under (a), (b), and (g). Google incorporates by reference all prior art references cited on the face of the '885 patent, related patents, and all foreign counterparts. Google further incorporates by reference any prior art references identified in the file history of the same. Google reserves the right to rely upon foreign counterparts of the U.S. Patents identified in these invalidity contentions, U.S. counterparts of foreign patents and foreign patent applications identified in these invalidity contentions, U.S. and foreign patents and patent applications corresponding to articles and publications identified in these invalidity contentions, and any systems, products, or prior inventions related to any references identified in these invalidity contentions.

*See* prior art publications identified in Section IV.A.

Google additionally identifies and relies on patent or publication references that describe or are otherwise related to the prior art systems identified below. Google's investigation into prior art patent and publication references remains ongoing, and Google reserves the right to identify and rely on additional patent or publication references that are identified through further investigation or discovery. Google reserves the right to supplement as further prior art is identified through investigation or discovery.

**2. Prior Art Publications**

*See* prior art publications identified in Section IV.A.

**3. Prior Art Systems and Products**

Google also contends that the asserted claims of the '885 Patent are invalid based on public knowledge and uses and/or offers for sale or sales of products and services that are prior art under

---

<sup>6</sup> Google also hereby identifies any systems or products that embody the technology described in any patent or publication identified in these Invalidity Contentions. Google reserves the right to rely on any documents or other evidence regarding any such systems

1 35 U.S.C. § 102(a) and/or (b); and/or prior inventions made in the United States by other inventors  
2 who had not abandoned, suppressed, or concealed them under 35 U.S.C. § 102(g), and that  
3 anticipate or render obvious under 35 U.S.C. § 103 the asserted claims.

4 Google incorporates by reference the patent/publications listed in the prior section. To the  
5 extent the cited references disclose and describe particular products and/or software programs that  
6 were publicly known and/or in public use prior to the priority date of the '885 Patent, in addition  
7 to each publication itself serving as a prior art reference under 35 U.S.C. § 102, the various  
8 products and/or software programs described in the publications may also serve as grounds for  
9 invalidity under 35 U.S.C. § 102 because they were in public use, in which case it would have  
10 been obvious to a person of ordinary skill in the art to combine the actual systems in public use  
11 with the published documents describing those systems because the documents described systems  
12 in public use and refer to them throughout

13 The following lists prior art products or services that invalidate the '885 Asserted Claims  
14 under at least 35 U.S.C. §§ 102(a), (b) and/or (g). Google may rely on all versions of the  
15 following prior art systems commercially sold, publicly known or used before the priority date of  
16 the '885 Patent, including documents and source code describing the same.

17 *See* prior art systems and products identified in Section IV.A.

18 Google's investigation into prior art systems remains ongoing. For example, Google has  
19 served additional discovery and third-party subpoenas seeking information regarding the prior art  
20 systems, including subpoenas to Crestron, Bose, Spotify and Logitech. Google reserve the right to  
21 rely upon additional information obtained through discovery or further investigation. Google also  
22 reserves the right to identify and rely on systems that represent different versions or are otherwise  
23 related variations of the systems identified above. Google may use physical samples, executable  
24 software, or source code as evidence of the relevant functionality of these prior art products or  
25 services. Google may make available for inspection any physical samples of products, systems, or  
26 software listed above, and/or any source code therefor, that it has in its possession or that becomes  
27 available in the future during discovery.

28

**B. Patent Local Rule 3-3(B), (C) – Anticipation And Obviousness**

**1. Charts Identifying Disclosure in Prior Art Invalidating Asserted Claims**

Google submits the following charts identifying specific locations in each alleged item of prior art each limitation of each asserted claim is found are attached as Exhibits 885-1 to 885-10. The contents of Exhibits 885-1 to 885-10, in combination with the foregoing patents, publications, and systems, anticipate and/or render obvious the '885 Patent Asserted Claims under 35 U.S.C. § 102, either expressly or inherently, and under § 103, in each case, as understood by a POSITA.

<b>Exhibit No.</b>	<b>Exhibit (claim chart explaining bases for invalidity of '885 Patent)</b>
885-1	U.S. 7,571,014 (Lambourne)
885-2	CA 2 533 852 (Millington)
885-3	U.S. 8,239,559 (Rajapakse)
885-4	Sonance DAB1 System
885-5	Sonos Forums
885-6	Sonos System
885-7	Bose System
885-8	Crestron Adagio
885-9	Home Director
885-10	Squeezebox

**2. Obviousness Prior Art**

Google identifies the following additional prior art now known to Google that, in combination with the foregoing patents, publications, and systems, render obvious the '885 Asserted Claims under 35 U.S.C. § 103, either expressly or inherently as understood by a POSITA, for at least the reasons stated in Section IX.

Lambourne, Millington, Rajapakse, Sonance DAB1, Sonos Forums, Sonos System, Bose System, Crestron Adagio, Home Director and Squeezebox each anticipate claims 1-3, 5-10, 12-17, and 19-20 under at least the interpretation that Plaintiff appears to rely upon for its infringement

1 contentions. In addition, as further explained in Exhibit 885-1 through Exhibit 885-10, the  
2 following claims are obvious under one or more interpretations in view of one of Lambourne,  
3 Millington, Rajapakse, Sonance DAB1, Sonos Forums, Sonos System, Bose System, Crestron  
4 Adagio, Home Director and Squeezebox in combination with:

5 1) For claims 1 and 8, the prior art of Riders A-E, G-H and L

6 In addition to the prior art references discussed above, which may be combined, Google  
7 discloses Exhibits Rider A – Rider H and Rider L, which each disclose certain areas of prior art  
8 known in the field and which may be combined with the disclosed references to render obvious the  
9 Asserted Claims.

- 10 1. Rider A – speaker grouping
- 11 2. Rider B – storing group information at a speaker
- 12 3. Rider C – remote control of speaker groups
- 13 4. Rider D – dynamic modification of speaker groups
- 14 5. Rider E – creating or using “scene” information
- 15 6. Rider G – naming a group
- 16 7. Rider H – overlapping or non-overlapping groups
- 17 8. Rider L – digital data network

18 Google provides further disclosure regarding obviousness in Section IX, below.

19 **C. Invalidity Under 35 U.S.C. § 112**

20 Google identifies below grounds of invalidity under 35 U.S.C. § 112. The grounds  
21 identified below both individually and collectively render the '885 Asserted Claims invalid under  
22 the statutory requirements of § 112. By identifying certain claim language below, Google does  
23 not imply that such language is entitled to any patentable weight when comparing the claim as a  
24 whole to the prior art. Google’s identifications are made based on Google’s present understanding  
25 of the Asserted Claims and Sonos’s apparent interpretation of these claims as reflected in its  
26 Infringement Contentions, and Google reserves the right to amend these identifications, including  
27 in response to claim constructions and claim interpretations that would render claim limitations  
28 not enabled, lacking in written description, or indefinite.

1  
2 **1. Lack of Enablement And Written Description Under 35 U.S.C. § 112**  
3 **¶ 1**

4 Based on Google's present understanding of the Asserted Claims and Sonos's apparent  
5 interpretation of these claims as reflected in its Infringement Contentions, the '885 Asserted  
6 Claims may fail to satisfy the requirements of § 112, ¶ 1 because the specification and original  
7 patent application fail to provide an enabling disclosure of and written description support for at  
8 least the following limitations below (or terms contained therein):

- 9 • "zone player"
- 10 • "zone scene"
- 11 • "operating in a standalone mode"
- 12 • "predefined grouping of zone players"
- 13 • "invoked"
- 14 • "causing storage"
- 15 • "displaying a representation of the first zone scene and a representation of the  
16 second zone scene"
- 17 • "transition from operating in the standalone mode to operating in accordance with  
18 the given one of the first and second predefined groupings of zone players"
- 19 • "first zone player is configured to coordinate with at least one other zone player in  
20 the given one of the first and second predefined groupings of zone players over a  
21 data network in order to output media in synchrony with output of media by the at  
22 least one other zone player in the given one of the first and second predefined  
23 groupings of zone players"
- 24 • "ceasing to operate in accordance with the first predefined grouping of zone  
25 players"
- 26 • "beginning to operate in accordance with the second predefined grouping of zone  
27 players"

28 Google further discloses that the original disclosure does not include the concept of  
synchronization among zone players after playback begins. That disclosure does not provide or  
create a motivation for transitioning or coordination of zone players. Similarly, the original  
disclosure does not provide that zone players may belong to more than one group or scene at the  
same time.

1                                **2. Indefiniteness Under 35 U.S.C. § 112 ¶ 2**

2            Based on Google’s present understanding of the Asserted Claims and Sonos’s apparent  
3 interpretation of these claims as reflected in its Infringement Contentions, the ’966 Asserted  
4 Claims may fail to satisfy the requirements of § 112, ¶ 2 because the precise scope of at least the  
5 phrases listed below (or terms contained therein) cannot be determined with reasonable certainty  
6 by a POSITA when reading the claims in light of the specification and prosecution history.

- 7            • “zone player”  
8            • “zone scene”  
9            • “operating in a standalone mode”  
10           • “predefined grouping of zone players”  
11           • “invoked”  
12           • “causing storage”  
13           • “displaying a representation of the first zone scene and a representation of the  
14           second zone scene”  
15           • “transition from operating in the standalone mode to operating in accordance with  
16           the given one of the first and second predefined groupings of zone players”  
17           • “first zone player is configured to coordinate with at least one other zone player in  
18           the given one of the first and second predefined groupings of zone players over a  
19           data network in order to output media in synchrony with output of media by the at  
20           least one other zone player in the given one of the first and second predefined  
21           groupings of zone players”  
22           • “ceasing to operate in accordance with the first predefined grouping of zone  
23           players”  
24           • “beginning to operate in accordance with the second predefined grouping of zone  
25           players”

26                                **3. Functional Claiming**

27            § 112 ¶ 6 limits functional claiming. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339,  
28 1349–51 (Fed. Cir. 2015) (en banc) (imposing new standard of indefiniteness to address  
“proliferation of functional claiming untethered to § 112, para. 6 and free of the strictures set forth  
in the statute”); *Function Media, LLC v. Google, Inc.*, 708 F.3d 1310, 1319 (Fed. Cir. 2013). It  
allows the patentee to claim the invention by the functions it performs, but limits the scope of  
those claims to the specific solutions disclosed in the specification—because in this country, the

1 patentee cannot claim more than what she invented. *MySpace, Inc. v. GraphOn Corp.*, 672 F.3d  
2 1250, 1256 (Fed. Cir. 2012). The following claim limitations are functional and thus are subject  
3 to § 112 ¶ 6 requirements and are indefinite for lack of structures in the specification, and are also  
4 not enabled because of the lack of structures:

- 5 • “cause...”

## 6 **VI. '206 PATENT**

### 7 **A. Patent Local Rule 3-3(A) – Identification of Prior Art**<sup>7</sup>

#### 8 **1. Prior Art Patents And Publications**

9 The following patents and publications are prior art to the '206 Asserted Claims under at  
10 least 35 U.S.C. §§ 102(a), (b), (e), and/or (g). Google incorporates by reference all prior art  
11 references cited on the face of the '206 patent, related patents, and all foreign counterparts.  
12 Google further incorporates by reference any prior art references identified in the file history of  
13 the same. Google reserves the right to rely upon foreign counterparts of the U.S. Patents identified  
14 in these invalidity contentions, U.S. counterparts of foreign patents and foreign patent applications  
15 identified in these invalidity contentions, U.S. and foreign patents and patent applications  
16 corresponding to articles and publications identified in these invalidity contentions, and any  
17 systems, products, or prior inventions related to any references identified in these invalidity  
18 contentions.

19 *See* prior art publications identified in Section IV.A.

20 Google additionally identifies and relies on patent or publication references that describe or  
21 are otherwise related to the prior art systems identified below. Google's investigation into prior  
22 art patent and publication references remains ongoing, and Google reserves the right to identify  
23 and rely on additional patent or publication references that are identified through further  
24 investigation or discovery. Google reserves the right to supplement as further prior art is  
25 identified through investigation or discovery.

---

26  
27 <sup>7</sup> Google also hereby identifies any systems or products that embody the technology described in  
28 any patent or publication identified in these Invalidity Contentions. Google reserves the right to  
rely on any documents or other evidence regarding any such systems

1 phrases listed below (or terms contained therein) cannot be determined with reasonable certainty  
2 by a POSITA when reading the claims in light of the specification and prosecution history.

- 3 • “detecting a set of inputs to transfer playback from the control device to a particular  
4 playback device, wherein the set of inputs comprises: (i) a selection of the  
5 selectable option for transferring playback from the control device and (ii) a  
6 selection of the particular playback device from the identified playback devices  
7 connected to the local area network”
- 8 • “causing one or more first cloud servers to add multimedia content to a local  
9 playback queue on the particular playback device, wherein adding the multimedia  
10 content to the local playback queue comprises the one or more first cloud servers  
11 adding, to the local playback queue, one or more resource locators corresponding to  
12 respective locations of the multimedia content at one or more second cloud servers  
13 of a streaming content service”
- 14 • “causing an identifier of the multimedia content to be added to the local playback  
15 queue, wherein the identifier indicates a particular source of the multimedia content  
16 at the one or more second cloud servers of the streaming content service, wherein  
17 the particular playback device receives the multimedia content from the particular  
18 source at the one or more second cloud servers of the streaming content service”
- 19 • “wherein causing one or more first cloud servers to add the multimedia content to  
20 the local playback queue on the particular playback device comprises sending a  
21 message to the streaming content service that causes the one or more first cloud  
22 servers to add the multimedia content to the local playback queue on the particular  
23 playback device”

## 24 **IX. OBVIOUSNESS**

25 No showing of a specific motivation to combine prior art is required to combine the  
26 references disclosed in Sections IV through VIII and in the attached charts, as each combination of  
27 art would have yielded expected results and at most would simply represent a known alternative to  
28 one of skill in the art. *See Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1058 (Fed. Cir.  
2016); *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1344 (Fed. Cir.  
2017); *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1739-40 (2007) (rejecting the Federal  
Circuit’s “rigid” application of the teaching, suggestion, or motivation to combine test, and instead  
applying an “expansive and flexible” approach). Indeed, the Supreme Court held that a POSITA  
is “a person of ordinary creativity, not an automaton” and “in many cases a person of ordinary  
skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle.”  
*KSR*, 127 S.Ct. at 1742. Nevertheless, in addition to the information contained in the section

1 immediately above and elsewhere in these contentions, Google hereby identifies motivations and  
2 reasons to combine.

3 One or more combinations of the prior art references identified above would have been  
4 obvious because these references would have been combined using: known methods to yield  
5 predictable results; known techniques in the same way; a simple substitution of one known,  
6 equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or  
7 motivation in the prior art generally. *See Apple*, 839 F.3d at 1077; *Intercontinental Great Brands*,  
8 869 F.3d at 1344. In addition, it would have been obvious to try combining the prior art  
9 references identified above because there were only a finite number of predictable solutions and/or  
10 because known work in one field of endeavor prompted variations based on predictable design  
11 incentives and/or market forces either in the same field or a different one. *See ACCO Brands*  
12 *Corp. v. Fellowes, Inc.*, 813 F.3d 1361, 1367 (Fed. Cir. 2016); *Sanofi-Aventis Deutschland GmbH*  
13 *v. Glenmark Pharms. Inc., USA*, 748 F.3d 1354, 1360 (Fed. Cir. 2014); *Bayer Pharma AG v.*  
14 *Watson Labs., Inc.*, 874 F.3d 1316, 1329 (Fed. Cir. 2017); *KSR*, 127 S. Ct. at 1742. Further, the  
15 combinations of the prior art references identified above and in the claim charts would have been  
16 obvious because the combinations represent known potential options with a reasonable  
17 expectation of success. *See InTouch Techs., Inc. v. VGo Comms., Inc.*, 751 F.3d 1327, 1347 (Fed.  
18 Cir. 2014).

19 Additional evidence that there would have been a motivation to combine the prior art  
20 references identified above includes the interrelated teachings of multiple prior art references; the  
21 effects of demands known to the design community or present in the marketplace; the existence of  
22 a known problem for which there was an obvious solution encompassed by the Asserted Claims;  
23 the existence of a known need or problem in the field of the endeavor at the time of the alleged  
24 inventions; and the background knowledge that would have been possessed by a POSITA. *See*  
25 *Arctic Cat Inc. v. Bombardier Recreational Prod. Inc.*, 876 F.3d 1350, 1359 (Fed. Cir. 2017);  
26 *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1344 (Fed. Cir. 2017);  
27 *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1003 (Fed. Cir. 2016); *Norgren Inc. v. Int'l*  
28 *Trade Comm'n*, 699 F.3d 1317, 1322-23 (Fed. Cir. 2012).

1 The motivation to combine the teachings of the prior art references disclosed herein is also  
2 found in the references themselves and in: (1) the nature of the problem being solved; (2) the  
3 express, implied and inherent teachings of the prior art; (3) the knowledge of POSITAs; (4) the  
4 predictable results obtained in combining the different elements of the prior art; (5) the predictable  
5 results obtained in simple substitution of one known element for another; (6) the use of a known  
6 technique to improve similar devices, methods, or products in the same way; (7) the predictable  
7 results obtained in applying a known technique to a known device, method, or product ready for  
8 improvement; (8) the finite number of identified predictable solutions that had a reasonable  
9 expectation of success; and (9) known work in various technological fields that could be applied to  
10 the same or different technological fields based on design incentives or other market forces. See  
11 above legal background regarding obviousness combinations and M.P.E.P. § 2143.

12 **A. '966 Patent '206 Patent and '885 Patent**

13 **1. General state of the art.**

14 The references cited herein (including in the prior art identification table above) set forth  
15 the state of the art with respect to the claimed invention and the accused speaker grouping at the  
16 time, with which a person having ordinary skill in the art would have been familiar.

17 The specification of the '966, '206 and '885 patents admits that manual speaker grouping,  
18 controlled remotely, available and ubiquitous at the time of the invention. The state of the art  
19 included multi-zone audio systems that could play different sets of media across zones or groups  
20 of speakers:

21 Currently, one of the systems that can meet part of such demand is a conventional  
22 multi-zone audio system that usually includes a number of audio players. Each of  
23 the audio players has its own amplifier(s) and a set of speakers and typically  
24 installed in one place (e.g., a room). In order to play an audio source at one  
25 location, the audio source must be provided locally or from a centralized location.  
26 When the audio source is provided locally, the multi-zone audio system functions  
27 as a collection of many stereo systems, making source sharing difficult. When the  
28 audio source is provided centrally, the centralized location may include a juke box,  
many compact discs, an AM or FM radio, tapes, or others. To send an audio source  
to an audio player demanding such source, a cross-bar type of device is used to  
prevent the audio source from going to other audio players that may be playing  
other audio sources.

In order to achieve playing different audio sources in different audio players, the  
traditional multi-zone audio system is generally either hard-wired or controlled by a

1 pre-configured and pre-programmed controller. While the pre-programmed  
2 configuration may be satisfactory in one situation, it may not be suitable for  
3 another situation. For example, a person would like to listen to broadcast news  
4 from his/her favorite radio station in a bedroom, a bathroom and a den while  
5 preparing to go to work in the morning. The same person may wish to listen in the  
6 den and the living room to music from a compact disc in the evening. In order to  
7 satisfy such requirements, two groups of audio players must be established. In the  
8 morning, the audio players in the bedroom, the bathroom and the den need to be  
9 grouped for the broadcast news. In the evening, the audio players in the den and the  
10 living room are grouped for the music. Over the weekend, the audio players in the  
11 den, the living room, and a kitchen are grouped for party music. Because the  
12 morning group, the evening group and the weekend group contain the den, it can be  
13 difficult for the traditional system to accommodate the requirement of dynamically  
14 managing the ad hoc creation and deletion of groups. '966 Patent at 1:46-2:17.

15 The patent specification asserts that what was missing from the prior art was “dynamic  
16 control” for audio players in a group because audio players allegedly needed to be “adjusted one at  
17 a time” and “in an inconvenient and non-homogenous audio environment.”

18 There is a need for dynamic control of the audio players as a group. With a  
19 minimum manipulation, the audio players may be readily grouped. In a traditional  
20 multi-zone audio system, the audio players have to be adjusted one at a time,  
21 resulting in an inconvenient and non-homogenous audio environment. Further,  
22 there is a need to individually or systematically adjust the audio volume of the  
23 audio players.  
24 2:11-17.

25 There was no need for dynamic control of audio players as a group because this too was  
26 well known in the art. For example, as described in this document and the attached exhibits, many  
27 prior art references and products described “dynamically” controlled zones of audio players,  
28 allowing group adjustments. The DAB1 system, for example, used an infrared remote control to  
select zones, select sources, and control zone volume. *E.g.*, DAB1 Distributed Audio System  
Instruction Manual at 25. The Creston system similarly allowed predefined groups to be created,  
which could then be selected for easy playback of multiple speakers. *See* Creston Claim Charts.

## 2. Obviousness combinations

Google discloses specific obviousness combinations in the attached claim charts.  
Motivations to combine the above items of prior art are present in the references themselves, the  
common knowledge of a POSITA, the prior art as a whole, and/or the nature of the problems  
allegedly addressed by the '966, '206 and '885 Patents. Combining the references identified in the  
accompanying claim charts would have been obvious, as the references identify and address the

1 same technical issues and suggest very similar solutions to those issues. Google reserves the right  
2 to amend or supplement these invalidity contentions to identify additional reasons that combining  
3 the references would be obvious to a POSITA.

4 In addition to the specific combinations of prior art and the specific combinations of  
5 groups of prior art disclosed, Google reserves the right to rely on any other combination of any  
6 prior art references disclosed herein. Google further reserves the right to rely upon combinations  
7 disclosed within the prosecution history of the references cited herein.

8 **a. Speaker grouping**

9 To the extent one or more references do not explicitly or inherently disclose speaker  
10 grouping as Sonos apparently contends is required, the references in Rider A each disclose this  
11 feature based on Google's present understanding of the Asserted Claims and Sonos's apparent  
12 construction of the Claims, as set forth in Sonos's Infringement Contentions.

13 The references cited in Rider A each would have been obvious to combine with the cited  
14 references because they are all directed to improving home audio or speaker systems. Further, the  
15 references are directed to enhancing the control of such systems, simplifying the user experience,  
16 reducing implementation time, augmenting the available speaker configurations, and improving  
17 the capabilities of individual speakers. Support for these motivations are provided in the Rider  
18 cited above.

19 For example, adding speaker grouping to an ungrouped set of speakers would combine  
20 known elements methods (combining separate elements for efficiency and ease of use) with  
21 speakers to yield the predictable result of increasing the efficiency and ease of use of a speaker  
22 system. As discussed herein and the references cited herein, this was well known in the art prior  
23 to the time of invention. As another example, the prior art references cited herein provide a teach,  
24 suggestion, or motivation to modify ungrouped speaker systems by adding grouping functionality.  
25 The '966 patent admits that these concepts were well known in the art.

26 Further, the '996 and '885 Patents include many duplicative elements and steps regarding  
27 speaker grouping that do not confer patentability. Rather, "the mere duplication of parts has no  
28 patentable significance unless a new and unexpected result is produced." *In re Harza*, 274 F.2d

1 669, 671 (CCPA 1960) (affirming obviousness rejection when claimed invention only differed  
2 over the prior art by the addition of a second rib where the prior art showed only one rib); *Dunbar*  
3 *v. Myers*, 94 U.S. 187, 188-189 (1876); *Peters v. Hanson*, 129 U.S. 541, 550 (1889). Here, the  
4 claimed requests creating and invoking the various zone scenes are identical. This duplication,  
5 therefore, cannot confer patentability. There is no skill or ingenuity required to duplicate the  
6 requests creating and invoking zone scenes, nor is there skill or ingenuity to duplicate the steps  
7 taken to invoke a zone scene. Therefore, a POSA would have found it obvious to accommodate  
8 multiple requests and to use the same steps for each.

9 **b. Storing group information at a speaker**

10 To the extent one or more references do not explicitly or inherently disclose storing group  
11 information at a speaker as Sonos apparently contends is required, the references in Rider B each  
12 disclose this feature based on Google's present understanding of the Asserted Claims and Sonos's  
13 apparent construction of the Claims, as set forth in Sonos's Infringement Contentions.

14 For example, it was well known to store system information at devices remote from the  
15 controller as shown by the prior art references cited herein. Adding this concept to a speaker  
16 system would have yielded the predictable result of storing group information at a speaker device.  
17 These were known methods that improved other home devices and appliances in the same way. It  
18 would also have been obvious to try to store grouping information at the speaker device, given that  
19 the information can only be stored in two locations—the controller or the speaker device. The  
20 prior art references cited herein disclose doing this, and therefore there would have been a  
21 reasonable expectation of success in doing so. The prior art references cited herein also teach,  
22 suggest, or motivate a person of skill in the art to store group information at a speaker because this  
23 is explicitly taught.

24 **c. Remote control of speaker group**

25 To the extent one or more references do not explicitly or inherently disclose remote control  
26 of a speaker group as Sonos apparently contends is required, the references in Rider C each  
27 disclose this feature based on Google's present understanding of the Asserted Claims and Sonos's  
28 apparent construction of the Claims, as set forth in Sonos's Infringement Contentions.

1 For example, remote control of a speaker group is merely combining known prior art  
2 elements (remote controls and speakers) to yield the predictable result of a remote controlled  
3 speaker system. This is also just the simple substitution of moving control of a speaker group  
4 from the group itself to a remote control, which was a well-known element in the art. Using  
5 remote control of a speaker group would also apply a known technique (remote controls) to a  
6 known device (speakers) ready for improvement to yield predictable results. It would also have  
7 been obvious to try remote control of a speaker group because there are only two locations from  
8 which the speakers can be controlled, on the speaker or remotely from the speaker. The prior art  
9 references cited herein also provide a teaching, suggestion, or motivation to utilize remote controls  
10 with speaker systems.

11 **d. Dynamic modification of speaker groups**

12 To the extent one or more references do not explicitly or inherently disclose “dynamically”  
13 modifying a speaker group as Sonos apparently contends is required, the references in Rider D  
14 each disclose this feature based on Google’s present understanding of the Asserted Claims and  
15 Sonos’s apparent construction of the Claims, as set forth in Sonos’s Infringement Contentions.

16 For example, it was known at the time of the invention to utilize a computerized system to  
17 dynamically control a remote unit. Further, a predictable result in the wired and wireless context  
18 is that less manual labor may be needed to wire or unwire devices. It would have been obvious to  
19 apply this teaching to speaker systems, as the prior art references cited herein show. Simply  
20 substituting wireless controls for dynamic modification of speaker groups would also have yielded  
21 those predictable results. It would have been obvious to try wireless or dynamic control of a  
22 speaker group because there are two options for speaker control—wired or wireless. And the  
23 speakers may be set in static and unchanging groups or may be dynamically changed, which  
24 presents a limited set of options and based on the prior art references disclosed herein, it would  
25 have been obvious to utilize dynamic controls with its obvious benefits. Similar adoption in other  
26 contexts where wired and static control was substituted with wireless and dynamic control abound.  
27 The prior art references cited herein also provide a teaching, suggestion, or motivation to utilize  
28 dynamic control of speaker grouping.

1                                    **e.        Creating or using “scene” information**

2            To the extent one or more references do not explicitly or inherently disclose creating or  
3 using “scene” information as Sonos apparently contends is required, the references in Rider E  
4 each disclose this feature based on Google’s present understanding of the Asserted Claims and  
5 Sonos’s apparent construction of the Claims, as set forth in Sonos’s Infringement Contentions.

6            For example, scene information was well known in the art and would have been obvious to  
7 combine with speaker systems, as shown by the prior art references cited herein. The prior art  
8 references cited herein also provide a teaching, suggestion, or motivation to utilize scene  
9 information.

10                                   **f.        Graphical user interface**

11           To the extent one or more references do not explicitly or inherently disclose using a  
12 graphical user interface as Sonos apparently contends is required, the references in Rider F each  
13 disclose this feature based on Google’s present understanding of the Asserted Claims and Sonos’s  
14 apparent construction of the Claims, as set forth in Sonos’s Infringement Contentions.

15           For example, graphical user interfaces were well known to use on wireless controllers as  
16 the time of the invention, and utilizing a graphical user interface in the context of speaker  
17 grouping would have yielded predictable results. The graphical user interface would have been a  
18 simple substitution for conventional buttons and knobs, and this substitution was made in many  
19 related contexts prior to the invention. It would also have been obvious to try to use a graphical  
20 user interface because the controller could use conventional buttons or knobs or a screen-based  
21 interface, which was one of a finite number of options with predictable solutions and a reasonable  
22 expectation of success. The prior art references cited herein also provide a teaching, suggestion,  
23 or motivation to utilize a graphical user interface.

24                                   **g.        Naming a group**

25           To the extent one or more references do not explicitly or inherently disclose naming a  
26 group as Sonos apparently contends is required, the references in Rider G each disclose this  
27 feature based on Google’s present understanding of the Asserted Claims and Sonos’s apparent  
28 construction of the Claims, as set forth in Sonos’s Infringement Contentions.

1 For example, identifying a group with a name combined known prior art elements  
2 according to known methods that yielded predictable results, namely, providing more descriptive  
3 information regarding the speaker groups. Naming groups was well known in related  
4 technological fields and had been applied with predictable results. The prior art references cited  
5 herein also provide a teaching, suggestion, or motivation to utilize naming of speaker groups.

6 **h. Overlapping or non-overlapping groups**

7 To the extent one or more references do not explicitly or inherently disclose either  
8 overlapping or non-overlapping speaker groups as Sonos apparently contends is required, the  
9 references in Rider H each disclose this feature based on Google's present understanding of the  
10 Asserted Claims and Sonos's apparent construction of the Claims, as set forth in Sonos's  
11 Infringement Contentions.

12 For example, utilizing overlapping or non-overlapping speaker groups would result from  
13 combining prior art elements according to known methods yielding only predictable results. It  
14 was well known in the art to group devices together and that those groups may be overlapping or  
15 non-overlapping. Applying these teachings to speaker groups would have been obvious. It would  
16 also have been obvious to try either overlapping or non-overlapping groups, given that these are  
17 the only two options for grouping speakers together, and therefore would have been a choice  
18 between a finite number of identified predictable solutions with a reasonable expectation of  
19 success. The prior art references cited herein also provide a teaching, suggestion, or motivation to  
20 utilize overlapping or non-overlapping speaker groups.

21 **i. Digital Data Networks**

22 To the extent one or more references do not explicitly or inherently disclose a digital data  
23 network as Sonos apparently contends is required, the references in Rider L each disclose this  
24 feature based on Google's present understanding of the Asserted Claims and Sonos's apparent  
25 construction of the Claims, as set forth in Sonos's Infringement Contentions.

26 For example, utilizing a digital data network would result from combining prior art  
27 elements according to known methods yielding only predictable results. It was well known in the  
28 art to use digital networks to transmit digital data packets. Applying these teachings to speaker

1 groups would have been obvious. The prior art references cited herein also provide a teaching,  
2 suggestion, or motivation to utilize a digital data network to transmit digital data packets.

3 **j. Sonos-Related Prior Art**

4 To the extent one or more of the Sonos related prior art identified in Section IV-VI and in  
5 the attached Exhibits (e.g., Lambourne, Millington, Sonos System, and Sonos Forums) do not  
6 explicitly or inherently disclose the limitations of the Asserted Claims, it would have been obvious  
7 to combine any one of the Sonos related prior art with one another to arrive at the limitation  
8 because they all describe related and interoperable systems. Indeed, a POSITA would have found  
9 it obvious to combine these references with one another because each of the references describes  
10 features and functionalities that are directed at the same or similar Sonos prior art devices. For  
11 example, the Sonos System was developed by Sonos, and Lambourne and Millington are patent  
12 publication that describe Sonos's products and that are both assigned to Sonos. Lambourne and  
13 Millington also name on their face employees of Sonos (including a common inventor, Nicholas  
14 Millington). A POSITA would have thus been motivated to combine these teachings with one  
15 another because each of these references describes improvements for the same or similar Sonos  
16 products. The Sonos Forums is also directed at improvements specifically for the Sonos prior art  
17 products, such as those disclosed in Sonos System, Lambourne, and Millington, such that a  
18 POSITA would have been motivated to combine the teaching of the Sonos Forums with these  
19 other Sonos references.

20 **B. '033 Patent and '615 Patents**

21 **1. General state of the art.**

22 The references cited herein (including in the prior art identification table above) set forth  
23 the state of the art with respect to the claimed invention and the accused control and playback  
24 devices at the time, with which a person having ordinary skill in the art would have been familiar.

25 The specification of the '033 and '615 patents admits that technology used to access and  
26 playback online audio and video content was available and ubiquitous at the time of the invention.  
27 The state of the art included wired or wireless networks connecting multiple playback devices  
28 within a home, to share multimedia content among devices or groups of devices:

1 **XII. OTHER RESERVATIONS AND EXPLANATIONS**

2       These Invalidity Contentions are subject to further revision as follows. Nothing in these  
3 contentions constitutes an admission concerning the priority date, conception date, or date of  
4 reduction to practice of the Asserted Claims. Google reserves the right to modify or supplement  
5 these Invalidity Contentions, including in response to any positions taken or information  
6 disclosed regarding the priority date, conception date, or date of reduction to practice of the  
7 Asserted Claims.

8       Google's Invalidity Contentions are based in part on Google's present understanding of  
9 the Asserted Claims and Sonos's apparent interpretation of these claims as reflected in its  
10 Infringement Contentions. By including prior art that anticipates or renders obvious claims based  
11 on Sonos's apparent claim interpretations, Google is not agreeing that Sonos's claim  
12 interpretations are correct.

13       Google reserves the right to revise their ultimate contentions concerning the invalidity of  
14 asserted the Asserted Claims, which may change depending on discovery taken in the case, any  
15 findings as to the priority date of the Asserted Claims, and/or positions that Sonos or expert  
16 witness(es) may take concerning claim construction, infringement, and/or invalidity issues. For  
17 example, despite Google's repeated requests, Sonos has failed to date failed to make source code  
18 for its prior art products available to Google. Google is continuing to confer with Sonos on the  
19 production of this source code and reserves the right to rely upon such code and/or supplement  
20 and amend its contentions based on Sonos's source code production. Further, Sonos's  
21 Infringement Contentions remain deficient, as detailed in, for example, Google's November 3,  
22 2021 letter to Sonos. To date, Sonos has refused to address these deficiencies.

23       Google may rely on Sonos's or any inventor's admissions concerning the scope of prior art  
24 relevant to the Asserted Patents; the patent prosecution histories for the Asserted Patents; any  
25 deposition testimony of the named inventors on the Asserted Patents; and the papers filed and any  
26 evidence submitted by Sonos in connection with this litigation. For example, Google reserves the  
27 right to further assert that the Asserted Claims are invalid under 35 U.S.C. § 102(f) in the event  
28 that Google obtains additional evidence that the named inventors did not invent (either alone or in

1 conjunction with others) the subject matter claimed in the Asserted Patents. For example, should  
2 discovery reveal additional evidence that Sonos derived the Cloud Queue patents based on  
3 Spotify's collaboration with Sonos, or that Sonos derived the Zone Scene patents from members  
4 on the Sonos Forums, or that Sonos derived the Cloud Queue patents from Google during their  
5 collaboration, those facts may impact the inventorship of the asserted patents by, among other  
6 things, showing improper inventorship and/or lack of standing. Should Google obtain additional  
7 evidence, it will provide the name(s) of any new person(s) from whom and the circumstances  
8 under which the claimed invention or any part of it was derived.

9       Prior art not included in this disclosure, whether known or not known to Google, may  
10 become relevant. In particular, Google is currently unaware of the extent, if any, to which Sonos  
11 will contend that limitations of the Asserted Patents are not disclosed in the prior art identified by  
12 Google. Sonos has refused to answer Google's interrogatories requesting its validity contentions  
13 for the references in these contentions. To the extent Sonos disputes the disclosure of any  
14 limitation, Google reserves the right to identify other references that would render obvious the  
15 allegedly missing limitation(s) of the disclosed device or method. Further, because discovery  
16 remains in its early stages Google has not yet completed its search for or analysis of relevant prior  
17 art, Google reserves the right to revise, amend, and/or supplement the information provided  
18 herein, including identifying, charting, and relying on additional references, should Google's  
19 further search and analysis yield additional information or references, consistent with the Federal  
20 Rules of Civil Procedure.

21       Additionally, because third-party discovery is not yet complete, Google reserves the right  
22 to present additional items of prior art under 35 U.S.C. §§ 102(a), (b), (e), and/or (g), and/or § 103,  
23 located during the course of such discovery or further investigation, and to assert invalidity under  
24 35 U.S.C. §§ 102(c), (d), or (f), to the extent that such discovery or investigation yields  
25 information forming the basis for such invalidity. For example, Google has issued and expects to  
26 issue subpoenas to, and receive information from, third parties believed to have knowledge,  
27 documentation, and/or corroborating evidence concerning some of the prior art listed below and/or  
28

1 additional prior art. These third parties include, without limitation, the authors, inventors,  
2 vendors, or assignees of the references listed in these disclosures.

3 Google further reserve the right to modify or add additional contentions in the event that  
4 Sonos provides amended infringement contentions and to the extent the Court orders or allows  
5 Sonos to amend its infringement contentions.

6  
7 Dated: December 6, 2021

QUINN EMANUEL URQUHART &  
SULLIVAN, LLP

8  
9 By: /s/ Charles K. Verhoeven  
Charles K. Verhoeven (pro hac vice)  
charlesverhoeven@quinnemanuel.com  
10 Melissa Baily (pro hac vice)  
melissabaily@quinnemanuel.com  
11 Lindsay Cooper (pro hac vice)  
lindsaycooper@quinnemanuel.com  
12 QUINN EMANUEL URQUHART &  
13 SULLIVAN LLP  
14 50 California Street, 22nd Floor  
San Francisco, California 94111-4788  
15 Telephone: (415) 875 6600  
16 Facsimile: (415) 875 6700

17 *Counsel for Defendant Google LLC*  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

**CERTIFICATE OF SERVICE**

I certify that a true and correct copy of the above and foregoing document was served on counsel for plaintiff Sonos, Inc. via electronic delivery on December 6, 2021.

/s/ Nima Hefazi  
Nima Hefazi